



PATENT

Case Docket No. TRIPEP.028AUS
Date: September 30, 2002

TECH CENTER 1600/2900

OCT 0 3 2002

RECEIVED

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s) : Matti Sällberg

Appl. No. : 09/930,591

Filed : August 15, 2001

For : HEPATITIS C VIRUS NON-
STRUCTURAL NS3/4A
FUSION GENE

Examiner : Unknown

Group Art Unit : 1642

) I hereby certify that this correspondence and at-
) marked attachments are being deposited with the
) United States Postal Service as first class mail in
) an envelope addressed to: United States Patent
) and Trademark Office, P.O. Box 2327,
) Arlington, VA 22202, on

September 30, 2002

(Date)

Eric S. Furman, Ph.D., Reg. No. 45,664

TRANSMITTAL LETTER

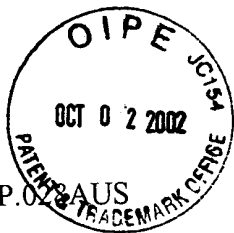
United States Patent and Trademark Office
P.O. Box 2327
Arlington, VA 22202

Dear Sir:

Enclosed for filing in the above-identified application are:

- (X) An Information Disclosure Statement.
- (X) A PTO Form 1449 with seventy-one (71) references.
- (X) The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment, to Account No. 11-1410.
- (X) Return prepaid postcard.

Eric S. Furman, Ph.D.
Registration No. 45,664
Attorney of Record



TRIPEP.02/AUS

PATENT

RECH CENTER 1600/2900

OCT 03 2002

RECEIVED

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Matti Sällberg) Group Art Unit 1642
App. No. : 09/930,591)
Filed : August 15, 2001)
For : HEPATITIS C VIRUS NON-)
STRUCTURAL NS3/4A)
FUSION GENE)
Examiner : Unknown)

INFORMATION DISCLOSURE STATEMENT

United States Patent and Trademark Office
P.O. Box 2327
Arlington, VA 22202

Dear Sir:

Enclosed is form PTO-1449 listing references that are also enclosed. This Information Disclosure Statement is being filed before the receipt of a first Office Action on the merits, and presumably no fee is required in accordance with 37 C.F.R. § 1.97(b)(3). If a first Office Action on the merits was mailed before the mailing date of this Statement, the Commissioner is authorized to charge the fee set forth in 37 C.F.R. § 1.17(p) to Deposit Account No. 11-1410.

Respectfully submitted,

KNOBBE, MARTENS, OLSON & BEAR, LLP

Dated: 9/9/02

By: [Signature]
Eric S. Eurnan, Ph.D.
Registration No. 45,664
Attorney of Record
Customer No. 20,995
(619) 235-8550

FORM PTO-1449

U.S. DEPARTMENT OF COMMERCE
PATENT AND TRADEMARK OFFICEATTY. DOCKET NO.
TRIEP.028AUSAPPLICATION NO.
09/930,591INFORMATION DISCLOSURE STATEMENT
BY APPLICANT

(USE SEVERAL SHEETS IF NECESSARY)

APPLICANT
Matti SällbergFILING DATE
August 15, 2001GROUP
1642

TECH CENTER 1600/2900

OCT 03 2002

RECEIVED

U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE (IF APPROPRIATE)
	1	6,303,292	10/16/01	Weiner et al.			
	2	6,312,889	11/06/01	Houghton et al.			

FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION	
							YES	NO
	3	EP 0 388 232	09/19/90	European Patent Office				
	4	EP 0 414 475	02/27/91	European Patent Office				
	5	WO 91/15575	10/17/91	WIPO				
	6	WO 92/19743	11/12/92	WIPO				
	7	WO 93/00365	01/07/93	WIPO				
	8	WO 93/06126	04/01/93	WIPO				
	9	WO 94/16737	08/07/94	WIPO				
	10	EP 0 450 931	06/12/96	European Patent Office				
	11	WO 96/28162	09/19/96	WIPO				
	12	WO 97/12043	04/03/97	WIPO				
	13	EP 0 543 924	06/18/97	European Patent Office				
	14	WO 97/26883	07/31/97	WIPO				
	15	WO 98/16184	04/23/98	WIPO				
	16	WO 98/16186	04/23/98	WIPO				
	17	EP 0 842 947	05/20/98	European Patent Office				
	18	WO 98/30223	07/16/98	WIPO				
	19	EP 0 693 687	07/28/99	European Patent Office				
	20	EP 0 556 292	12/29/99	European Patent Office				
	21	WO 00/44388	08/03/00	WIPO				
	22	EP 1 034 785	09/13/00	European Patent Office				
	23	EP 0 318 216	08/29/01	European Patent Office				
	24	EP 0 398 748	01/09/02	European Patent Office				
	25	WO 02/13855	02/21/02	WIPO				

EXAMINER

DATE CONSIDERED

*EXAMINER: INITIAL IF CITATION CONSIDERED, WHETHER OR NOT CITATION IS IN CONFORMANCE WITH MPEP 609; DRAW LINE THROUGH CITATION IF NOT IN CONFORMANCE AND NOT CONSIDERED, INCLUDE COPY OF THIS FORM WITH NEXT COMMUNICATION TO APPLICANT.

INFORMATION DISCLOSURE STATEMENT
BY APPLICANT

USE SEVERAL SHEETS IF NECESSARY)

APPLICANT
Matti SällbergFILING DATE
August 15, 2001GROUP
1642

FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION	
							YES	NO
	26	WO 02/14362	02/21/02	WIPO				

OTHER DOCUMENTS (INCLUDING AUTHOR, TITLE, DATE, PERTINENT PAGES, ETC.)

EXAMINER INITIAL		
	27	AASLD Abstracts 940, "Hepatitis C Virus NS5A Sequence Configuration does not Predict Response to Induction Interferon Plus Ribavirin," <i>Hepatology</i> , p. 394A (2000).
	28	Chen et al., "Human and Murine Antibody Recognition is Focused on the ATPase/Helicase, but not the Protease Domain of the Hepatitis C Virus Nonstructural 3 Protein," <i>Hepatology</i> , 28(1):219-224 (1998).
	29	Chen et al., "Detection of Hepatitis C Virus RNA in the Cell Fraction of Saliva Before and After Oral Surgery," <i>J. Med. Virol.</i> , 43:223-226 (1995).
	30	Chiang et al., "Enhancement of hepatitis C virus core antigen-specific type 1 T helper cell response by ribavirin correlates with the increased level of IL-2," <i>Vaccine Strategies Against Microbial Pathogens</i> , 42.11-42.16, p. A949 (date unknown).
	31	Cotonat et al., "Pilot Study of Combination Therapy with Ribavirin and Interferon Alfa for the Retreatment of Chronic Hepatitis B e Antibody-Positive Patients," <i>Hepatology</i> , 31(2):502-506 (2000).
	32	Cramp et al., "Hepatitis C Virus-Specific T-Cell Reactivity During Interferon and Ribavirin Treatment in Chronic Hepatitis C," <i>Gastron. Enterol.</i> , 118:346-355 (2000)
	33	Encke et al., "Genetic Immunization Generates Cellular and Humoral Immune Responses Against the Nonstructural Proteins of the Hepatitis C Virus in a Murine Model," <i>Journal of Immunology</i> , 161:4917-4923 (1998).
	34	Diepolder et al., "Possible mechanism involving T-lymphocyte response to non-structural protein 3 in viral clearance in acute hepatitis C virus infection," <i>Lancet</i> , 346(8981):1006-1007.
	35	Gordon et al., "Immune responses to hepatitis C virus structural and nonstructural proteins induced by plasmid DNA immunizations," <i>Journal of Infectious Diseases</i> , 181(1):42-50.
	36	Hsu et al., "Prospects for a Hepatitis C Virus Vaccine", <i>Clin Liver Dis</i> , 3(4):901-915 (1999).
	37	Huffman et al., "In vitro effect of 1-beta-D-ribofuranosyl-1,2,4-triazole-3-carboxamide (virazole, ICN 1229) on deoxyribonucleic acid and ribonucleic acid viruses," <i>Antimicrob. Agents. Chemother.</i> , 3(2):235 (1973).
	38	Jin et al., "Expression, isolation, and characterization of the hepatitis C virus ATPase/RNA Helicase," <i>Arch. Biochem. Biophys.</i> , 323:47-53 (1995).
	39	Kakumu et al., "Pilot Study of Ribavirin and Interferon- for Chronic Hepatitis B," <i>Hepatology</i> , 18(2):258-263 (1993).
	40	Kato, "Genome of human hepatitis C virus (HCV): gene organization, sequence diversity, and variation," <i>Microb. Com. Genomics</i> , 5(3):129-151 (2000).
	41	Kwong et al., "Hepatitis C virus NS3/4A protease," <i>Antiviral Res.</i> , 41(1):67-84 (1999).
	42	Kwong et al., "Structure and function of hepatitis C virus NS3 helicase," <i>Curr. Top. Microbiol. Immunol.</i> , 242:171-196 (2000).
	43	Lawrence et al., "Advances in the treatment of hepatitis C," <i>Adv. Intern. Med.</i> , 45:65-105 (2000).
	44	Li et al., "Role of the guanosine triphosphatase Rac2 in T helper 1 cell differentiation," <i>Science</i> , 288:2219-2222 (2000).
	45	Marquardt et al., "Ribavirin inhibits mast cell mediator release," <i>J. Pharmacol. Exp. Therapeutics</i> , 240(1):145-149 (1987).
	46	Marshall et al., "Detection of HCV RNA by the asymmetric gap ligase chain reaction," <i>PCR Methods and Applications</i> , 4(2):80-84 (1994).
	47	Memar O. et al., "Antiviral Agents in Dermatology; Current Status and Future Prospects," <i>International Journal of Dermatology</i> , 34(9):597-606 (1995).

EXAMINER

DATE CONSIDERED

*EXAMINER: INITIAL IF CITATION CONSIDERED, WHETHER OR NOT CITATION IS IN CONFORMANCE WITH MPEP 609; DRAW LINE THROUGH CITATION IF NOT IN CONFORMANCE AND NOT CONSIDERED, INCLUDE COPY OF THIS FORM WITH NEXT COMMUNICATION TO APPLICANT.

FORM PTO-1449

U.S. DEPARTMENT OF COMMERCE
PATENT AND TRADEMARK OFFICEATTY. DOCKET NO.
TRIPEP.028AUSAPPLICATION NO.
09/930,591INFORMATION DISCLOSURE STATEMENT
BY APPLICANT

(USE SEVERAL SHEETS IF NECESSARY)

APPLICANT
Matti SällbergFILING DATE
August 15, 2001GROUP
1642

TECH CENTER 1600/2900

OCT 13 2002

RECEIVED

EXAMINER INITIAL	OTHER DOCUMENTS (INCLUDING AUTHOR, TITLE, DATE, PERTINENT PAGES, ETC.)
48	Missale et al., "Different clinical behaviours of acute hepatitis C virus infection are associated with different vigor of the anti-viral cell-mediated immune response," <i>J. Clin. Invest.</i> , 98(3):706-714 (1996).
49	Neuberger et al., "Recombinant antibodies possessing novel effector functions," <i>Nature</i> , 312:604-608 (1984).
50	Pape et al., "Role of the specific T-cell response for clearance and control of hepatitis C virus," <i>J. Viral. Hepat.</i> , Supp. 6, 1:36-40 (1999).
51	Peavy et al., "Inhibition of murine plaque-forming cell responses in vivo by ribavirin," <i>J. Immunology</i> , 126(3):861-864 (1981).
52	Powers et al., "Selective inhibition of functional lymphocyte subpopulations by ribavirin," <i>Antimicrob. Agents. Chemother.</i> , 22(1):108-114 (1982).
53	Proust B. et al., "Two Successive Hepatitis C Virus Infections in an Intravenous Drug User," <i>Journal of Clinical Microbiology</i> , 38(8):3125-3127 (2000).
54	Ramasamy et al., "Monocyclic L-Nucleosides with Type 1 Cytokine-Inducing Activity," <i>Journal of Medicinal Chemistry</i> , 43(5):1019-1028 (2000).
55	Sällberg et al., "Characterization of humoral and CD4+ cellular responses after genetic immunization with retroviral vectors expressing different forms of the hepatitis B virus core and e antigens," <i>Journal of Virology</i> , 71:5295-5303 (1997).
56	Sällberg and Hultgren, "Vaccines Containing Ribavirin and Methods of use Thereof," U.S. Patent Application Serial No. 09/929,955 , filed August 15, 2001.
57	Sällberg and Hultgren, "Vaccines Containing Ribavirin and Methods of use Thereof," U.S. Patent Application Serial No. 10/104,966 , filed March 22, 2002.
58	Schulof R. S., "Clinical, Virologic, and Immunologic Effects of Combination Therapy with Ribavirin and Isoprinosine in HIV-Infected Homosexual Men," <i>Journal of Acquired Immune Deficiency Syndromes</i> , 3(5):485-492 (1990).
59	Sidwell et al., "Broad-spectrum antiviral activity of Virazole: 1-beta-D-ribofuranosyl-1,2,4-triazole-3-carboxamide," <i>Science</i> , 177(50):705-706 (1972).
60	Smith et al., "Molecular Engineering of the <i>Autographa californica</i> Nuclear Polyhedrosis Virus Genome: Deletion Mutations Within the Polyhedrin Gene," <i>Journal of Virology</i> , 46:584 (1983).
61	Spector et al., "The Antiviral Effect of Zidovudine and Ribavirin in Clinical Trials and the Use of p24 Antigen Levels as a Virologic Marker," <i>Journal of Infectious Diseases</i> , 159(5):822-828 (1989).
62	Szybalska and Szybalska, "Genetics of Human Cell Lines, IV. DNA-Mediated Heritable Transformation of a Biochemical Trait," <i>Proc Natl Acad Sci USA</i> , 48:2026 (1962).
63	Takeda et al., "Construction of chimaeric processed immunoglobulin genes containing mouse variable and human constant region sequences," <i>Nature</i> , 314:452-454 (1985).
64	Tam et al., "Ribavirin Polarizes Human T Cell Responses Towards a Type 1 Cytokine Profile," <i>Journal of Hepatology</i> , 30(3):376-382 (1999).
65	Tan et al., "How hepatitis C virus counteracts the interferon response: the jury is still out on NS5A," <i>Virology</i> , 284(1):1-12 (2001).
66	Vaitukaitis et al., "A method for producing specific antisera with small doses of immunogen," <i>J. Clin. Endocrinology Metab.</i> , 33(6):988-991 (1971).
67	Walsh et al., "Update on chronic viral hepatitis," <i>Postgrad Medical Journal</i> , 77(910):498-505 (2001).
68	Wang et al., "Synthesis and Cytokine Modulation Properties of Pyrrolo[2,3-d]-4-pyrimidone Nucleosides," <i>J. Med. Chem.</i> , 43(13):2566-2574 (2000).
69	Zhang et al., "Characterization of a monoclonal antibody and its single-chain antibody fragment recognizing the nucleoside triphosphatase/helicase domain of the hepatitis C virus nonstructural 3 protein," <i>Clin. Diagn. Lab. Immunol.</i> , 7(1):58-63 (2000).

EXAMINER

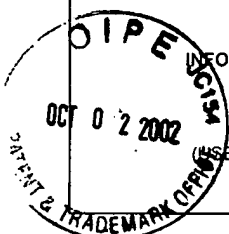
DATE CONSIDERED

*EXAMINER: INITIAL IF CITATION CONSIDERED, WHETHER OR NOT CITATION IS IN CONFORMANCE WITH MPEP 609; DRAW LINE THROUGH CITATION IF NOT IN CONFORMANCE AND NOT CONSIDERED, INCLUDE COPY OF THIS FORM WITH NEXT COMMUNICATION TO APPLICANT.

RECEIVED

TECH CENTER 1600/2900
OCT 09 2002
SHEET 4 OF 4

FORM PTO-1449	U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE	ATTY. DOCKET NO. TRIPEP.028AUS	APPLICATION NO. 09/930,591
INFORMATION DISCLOSURE STATEMENT BY APPLICANT (USE SEVERAL SHEETS IF NECESSARY)		APPLICANT Matti Sällberg	
		FILING DATE August 15, 2001	GROUP 1642



EXAMINER INITIAL	OTHER DOCUMENTS (INCLUDING AUTHOR, TITLE, DATE, PERTINENT PAGES, ETC.)
70	Zhang et al., "Molecular basis for antibody cross-reactivity between the hepatitis C virus core protein and the host-derived GOR protein," <i>Clin. Exp. Immunol.</i> , 96(3):403-409 (1994).
71	http://www.msi.com/life/products/cerius2/modules/analogbuilder.html , C2Analog Builder, July 6, 2000.

S:\DOCS\DA\DAI-1722.DOC
091202

EXAMINER	DATE CONSIDERED
*EXAMINER: INITIAL IF CITATION CONSIDERED, WHETHER OR NOT CITATION IS IN CONFORMANCE WITH MPEP 609; DRAW LINE THROUGH CITATION IF NOT IN CONFORMANCE AND NOT CONSIDERED, INCLUDE COPY OF THIS FORM WITH NEXT COMMUNICATION TO APPLICANT.	